



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,757	09/29/2006	Kazuhiro Hikida	2593-0167PUS1	4880
2292 7590 07/23/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER BELYAEV, YANA				
ART UNIT 1791		PAPER NUMBER		
NOTIFICATION DATE 07/23/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/594,757

Applicant(s)

HIKIDA ET AL.

Examiner

YANA BELYAEV

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 29 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date 9/29/06, 1/27/09
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on 29 September 2006 and 27 January 2009 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent 10-100145 (Oguchi hereinafter).

A machine translation was used to interpret the document. All footnotes correlate to the machine translation, a copy of which is attached.

Regarding claims 1 and 9, Ogushi discloses a method of production of a rubbery polymer (paragraph 1) comprising feeding a polymer latex (paragraph 10, line 3) and a coagulation solution containing a coagulating agent (referred to as a solidifying solution in the machine translation)

(paragraph 10, line 4) to a crusher pump (paragraph 10, line 6) and bringing said polymer latex and said coagulating agent into contact so as to make the rubbery polymer ingredient coagulate and obtain a crumb slurry containing a crumb rubbery polymer (paragraph 10, line 9).

Ogushi discloses that the polymer latex is a latex of an unsaturated nitrile-conjugated diene copolymer obtained by emulsion polymerization, specifically a acrylonitrile butadiene copolymerization rubber (paragraph 23).

Ogushi further discloses in Example 1, that the crusher pump has a head of 20 m (paragraph 56), which is more than 10 m.

Regarding claim 2, Ogushi discloses that the crusher pump has first blades for crushing the coagulated rubbery polymer ingredient (paragraph 31 and Figure 1, element 34) and second blades provided at the outer circumference of said first blades (paragraph 31 and Figure 1, element 36).

Regarding claim 3, Ogushi discloses that the crusher pump has a stationary frame between said first blades and said second blades (paragraph 32 and Figure 2, element 38).

Regarding claim 4, Ogushi discloses that the holes for discharging the rubbery polymer ingredient crushed by said first blades from said first blades (Figure 2, element 40 and 42) to the direction of said second blades are formed in said stationary frame (paragraph 32).

Regarding claim 6, Ogushi discloses that the method further has a washing step of washing said crumb slurry by water so as to remove said coagulating agent from the crumb rubbery polymer (paragraph 21).

Regarding claim 7, Ogushi discloses that the method further has a squeezing step of squeezing out the moisture from said crumb slurry to obtain a crumb rubbery polymer (paragraph 24, lines 5-8) and a step of drying by heating the crumb rubbery polymer from which said moisture has been squeezed out (paragraph 18, lines 1-2).

Regarding claim 8, Ogushi discloses that the method further has a step of discharging said crumb slurry into a tank (referred to as a barrel in the machine translation) and stirring said crumb slurry in said tank (paragraph 18 and 19).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a

background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 5 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogushi as applied to claims 1-4 and 6-9 above, and further in view of US Patent 3,944,639 (Osajima hereinafter).

Regarding claims 5 and 12, Ogushi discloses a first step of feeding a polymer latex (paragraph 10, line 3) and a coagulation solution containing a coagulating agent (paragraph 10, line 4) to a crusher pump (paragraph 10, line 6) and bringing said polymer latex and said coagulating agent into contact to make the rubbery polymer ingredient coagulate and obtain a crumb slurry containing a crumb rubbery polymer (paragraph 10, line 9).

Ogushi further discloses a second step of running said crumb slurry from a discharge port of said pump through a pipe (Figure 1, element 48) and releasing it into the atmosphere (paragraph 37 and 38).

Ogushi does not specifically disclose a ratio (L/D) of a length L of said pipe and an inside diameter D of the discharge port of said pump being not more than 20. However, Osajima discloses that an extrusion dryer, similar to the one disclosed by Ogushi (paragraph 56), has a ratio (L/D) of a length L

of said pipe and an inside diameter D of the discharge port of said pump of 20 (column 7, lines 32-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the ratio of the length to inside diameter of the extruder disclosed by Osajima in the apparatus disclosed by Ogushi since the apparatus disclosed by Osajima is used to extrude a similar composition to that which Ogushi extrudes (column 10, lines 53-60).

Regarding claims 11 and 13, Ogushi discloses a crusher pump in which a polymer latex and a coagulation solution containing a coagulating agent can be brought into contact and mixed (paragraph 10), wherein said pump having a head of 10 m or more (paragraph 56); a pipe for releasing a crumb slurry containing a crumb rubbery polymer discharged from a discharge port of said crusher pump into the atmosphere (Figure 1, element 48 and paragraphs 37 and 38).

However, Ogushi does not disclose that the ratio (L/D) of a length L of said pipe and an inside diameter D of the discharge port of said pump is not more than 20.

Osajima discloses that an extrusion dryer, similar to the one disclosed by Ogushi (paragraph 56), has a ratio (L/D) of a length L of said pipe and an inside diameter D of the discharge port of said pump of 20 (column 7, lines 32-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the ratio of the length to inside diameter of the extruder disclosed by Osajima in the apparatus disclosed by Ogushi since the apparatus disclosed by Osajima is used to extrude a similar composition to that which Ogushi extrudes (column 10, lines 53-60).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogushi as applied to claims 1-9, and 12 above, and further in view of US Patent 4,190,721 (Hertel hereinafter).

Regarding claim 10, Ogushi does not disclose that the coagulating agent is at least one type selected from the group comprised of calcium chloride, magnesium sulfate, and aluminum sulfate.

However, Hertel discloses that magnesium sulfate is added as a coagulating agent to a polymer latex (column 21, lines 16-17).

It would have been obvious for one of ordinary skill in the art at the time of the invention to have added magnesium sulfate as a coagulating agent since magnesium sulfate is a known coagulating agent for polymer latexes (column 21, lines 43-50).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YANA BELYAEV whose telephone

number is (571)270-7662. The examiner can normally be reached on M-Th 8:30am - 6pm; F 8:30 am- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. B./
Examiner, Art Unit 1791

/Jason L Lazorcik/
Examiner, Art Unit 1791